

We Claim:

1. A surface emitting semiconductor laser chip, comprising:

a semiconductor body having, at least partly, a crystal structure with principal crystal directions, a radiation exit face, and side faces laterally delimiting said semiconductor body, at least one of said side faces disposed obliquely with respect to the principal crystal directions.
2. The semiconductor laser chip according to claim 1, wherein said semiconductor body has a cross section selected from the group of square cross sections and rectangular cross sections disposed parallel to said radiation exit face.
3. The semiconductor laser chip according to claim 1, wherein said principal crystal directions includes a given direction running parallel to said radiation exit face, and at least one of said side faces forms an angle of between 40° and 50° with said given direction.
4. The semiconductor laser chip according to claim 1, wherein said semiconductor body contains a substrate having, at least partly, a crystal structure.

5. The semiconductor laser chip according to claim 4, wherein said semiconductor body contains a III-V compound semiconductor.

6. The semiconductor laser chip according to claim 1, wherein the semiconductor laser chip is a VCSEL.

7. The semiconductor laser chip according to claim 3, wherein said angle is 45° .

8. The semiconductor laser chip according to claim 5, wherein said III-V compound semiconductor is selected from the group consisting of GaAs, AlGaAs, and a nitride compound semiconductor.

9. The semiconductor laser chip according to claim 1, wherein said given direction is a [100] direction.

10. A method for producing a surface emitting semiconductor laser chip, which comprises the steps of:

producing a semiconductor wafer having a plurality of surface emitting semiconductor structures, the semiconductor wafer having principal crystal directions; and

dividing the semiconductor wafer into a plurality of semiconductor laser chips along separating lines, the separating lines being disposed obliquely with respect to the principal crystal directions.

11. The method according to claim 10, which further comprises performing the dividing step by one of sawing and etching the semiconductor wafer along the separating lines.

12. The method according to claim 10, which further comprises creating the separating lines to form an angle of between 40° and 50° with the principal crystal directions.

13. The method according to claim 10, which further comprises creating the separating lines to form an angle of 45° with the principal crystal directions.

14. The method according to claim 10, which further comprises forming the semiconductor laser chips as vertical cavity surface emitting lasers.